TC MRO

TURBINE CONTROLS

A VSE Aviation Company

Customer Focused, Customer Driven

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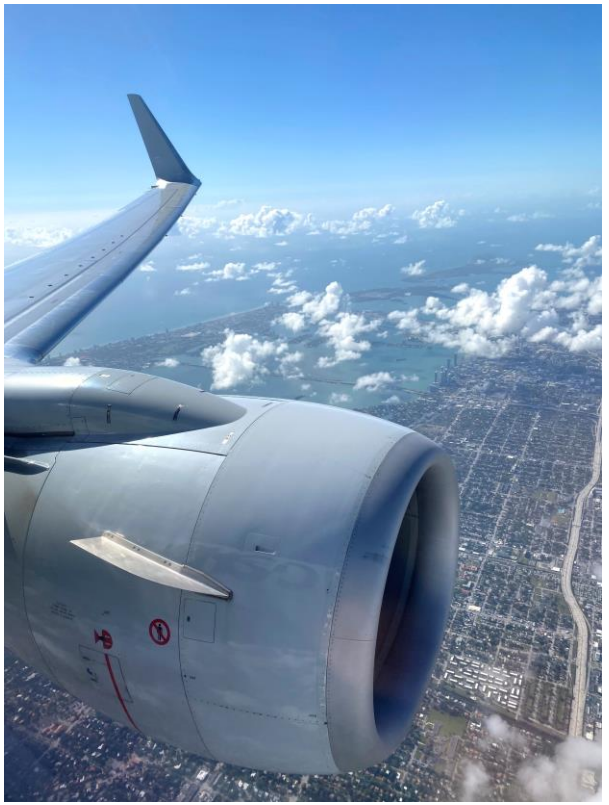


I. Overview

TC MRO is an industry leading FAA, EASA & CAAC approved repair station specializing in the maintenance, repair and overhaul of jet engine and airframe components and accessories for commercial, military and industrial applications worldwide

- **Customer Focused** and **Customer Driven** since **1979**
- Acquired by **VSE Aviation** in 2024
- Comprised of **seasoned professionals**, **state-of-the-art facilities** and **cutting edge technology** to offer customers top MRO services
- **Competitive pricing** and **swift turnaround times**
- Strong commitment to **quality**, **teamwork**, **integrity**, **excellence** and **continuous improvement**
- Honest, ethical and held to the **highest standards**

Core Areas of MRO Excellence

Components

- Shafts
- Housings and Cones
- Cases
- Stationary Seals
- Rotating Seals
- Spools
- Disks
- Frames
- Gearbox Assemblies
- Gearbox Details

Accessories

- Pneumatics
- Hydraulics
  - Red Oil (5606)
  - Skydrol
- Fuel
- Engine Oil
- Electro-Mechanical

- **Connecticut Site**: Engine Component MRO; Transmission MRO
- **Florida Site**: Engine & Airframe Accessory MRO; Engine Disassembly

The TC MRO Advantage

Promoting a safe, respectful culture founded on family, teamwork and the highest level of quality service

Culture

Quality

Highest level of performance quality

Technology

Customer Service

Pricing

Robust engineering team and constant investment in cutting edge technology and new capabilities

Long-term product support through a designated single contact assigned to each account with status and on-time delivery performance reporting

Competitive hourly rates to reduce operating costs for maintenance

II. CONNECTICUT FACILITY

5 OLD WINDSOR ROAD, BLOOMFIELD, CT 06002

Products Serviced

HP & LP Turbine
- HPT Nozzle/Vane Outer Support
- HPT Disk/Hubs & Shafts
- HPTR Front & Rear Shafts
- HPT Rear Rotating Air Seal
- HPT Shroud Support Assembly
- HPT Impingement & Cooling Manifolds
- LPT Disks
- LPT Rotating Air Seals

Fan & LP Compressor
- Fan Disk
- Booster Spools/Drums
- Forward Fan & LPC Coupling Shaft
- Bearing Dumper Housing & Supports
- Rotating Air/Oil Seals
- Spinner Cones
- LPC Van & Booster Vanes Assemblies
- Compressor Rotor Shafts & Hubs

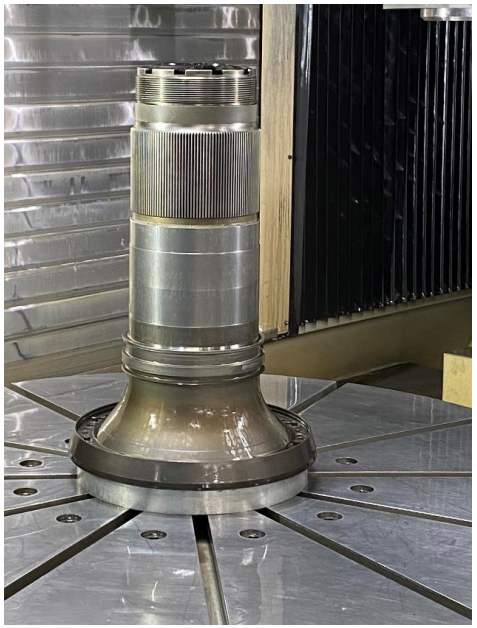
Gearbox Internals & Externals
- Inlet Gearbox/Angle
- Gearbox Housings
- Drive Gear Shafts
- Horizontal Bevel Gears
- Radial Bevel Gear
- Transfer Gearbox Housing
- Radial Drive Shaft
- Gearbox Mount Links
- Main Engine Gearbox
- Reduction Gearbox

Seals & Bearing Holders
- Rear Vent Tube
- FWD Rotating Oil Seal
- Air/Oil Separator
- Bearing Support Assembly
- Oil Inlet Cover/Rear Cover
- Air Heater Cover
- Inner and Outer Air Seals

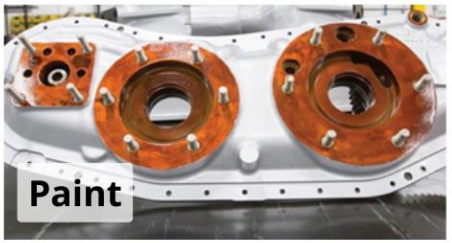
HPC/Diffuser/Combustion Cases
- HPC Cases
- CDP Seals
- Combustion/Diffuser Cases
- Stage 1 Nozzle/Vane Support
- Bearing FWD/AFT Stationary Seal Segments
- Honeycomb Seal Supports
- FWD Inner Rotating Air/Oil Seals

Turbine Exhaust Cases & Frames
- LPT Cases
- LPT Frames/Exhaust Cases

Products Serviced

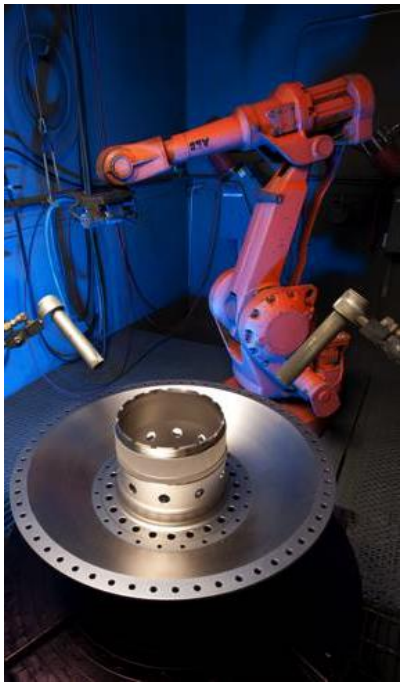
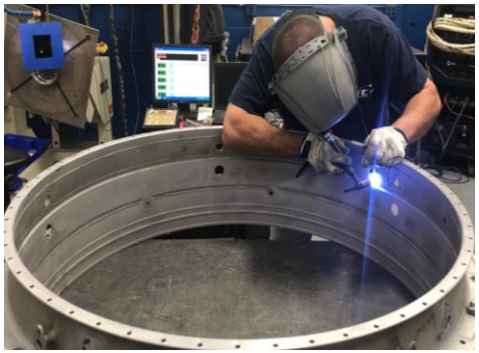


Products Serviced: Gearbox MRO



Process Capabilities

- CNC OD/ID Grinding
- CNC Turning/ Machining
- Boring/Milling
- Jig Grinding
- Tig Welding (Hand & Dabber)
- Electron Beam Welding
- NDT (FPI/MPI/ECI)
- Grit Blasting
- Wet Blasting
- Plasma
- Shot Peening
- Painting
- Vacuum Brazing
- Heat Treating
- Honing/Lapping
- Etching
- Balancing
- Dynamic Balancing
- Assembly
- Blending (Wet & Dry)
- Chemical Cleaning
- Epoxy Repairs
- Flushing
- Inspection/CMM
- Electrical Discharge Machining (EDM)

Process Capabilities

Welding
- Welding (Dabber & Hand TIG)
- Electron Beam

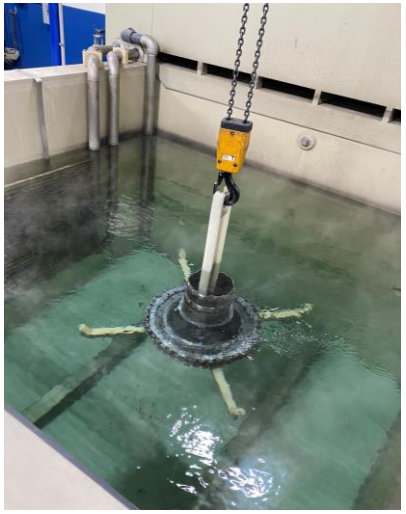
Cleaning
- Aqueous
- Multi-Step Chemical Cleaning (4-Step Alkaline)

Stripping – Abradable Coatings – Rotating
- Chemical Coating Strip

Media Blasting
- Automated Robotic 6 Axis Shot Peen
- Grit/Plastic
- Manual/Semi-Automated Shot & Glass Bead Peening
- Wet Blast

Heat Treatment
- Air Furnace/ Ovens
- Vacuum Furnace
  - Honeycomb Replacement
  - Braze Repair
  - EDM (Sinker)

Coatings
- HVOF
- Conversion Coating
- Paint
- Etching
- Epoxy – Restoration
- Plasma (Wire & Powder Capable)



Process Capabilities: State-of-the-Art Chemical Clean and Strip Line

Repair Equipment

Milling (Vertical / Horizontal)
4 Axis CNC
5 Axis CNC
6 Axis CNC
Various Manual Milling

Various Support Functions & Equipment
Plasma Spray
Deburr
Blend
Polish
Honing
Reaming
Static Balancing
Dynamic Balancing

Turning
VTLs
Horizontal Engine Lathes
CNC VTL
CNC Horizontal Lathes
Various Manual Turning

Various Testing (Bench / Flow Bench)
Oil Flow (Pressure/Flow/Temp)
Pneumatic (Pressure/Flow/Temp)

Grinding (ID & OD)
Small (Gear/Shaft)
Large (Campbell)
Surface Grinding
Jig Grinding
Long Shaft Grinding

Inspection
CMM (5 Stations)
FPI (3 Stations)
ECI
MPI (2 Stations)

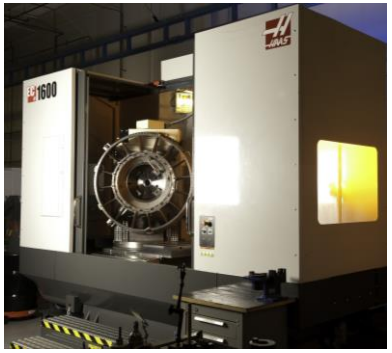
Repair Equipment

Model HV-1000 Vertical Spindle Honing Machine

Automatic Shot Peen

Plasma / HVOF Robot

Campbell Grinder Model 1000C1500



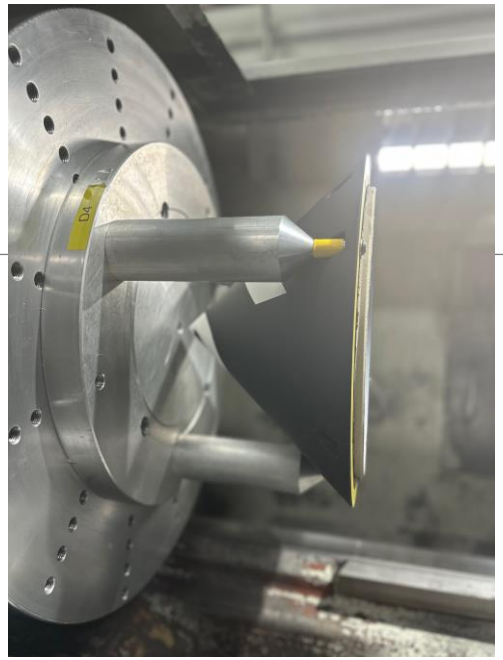
CNC Milling Machine

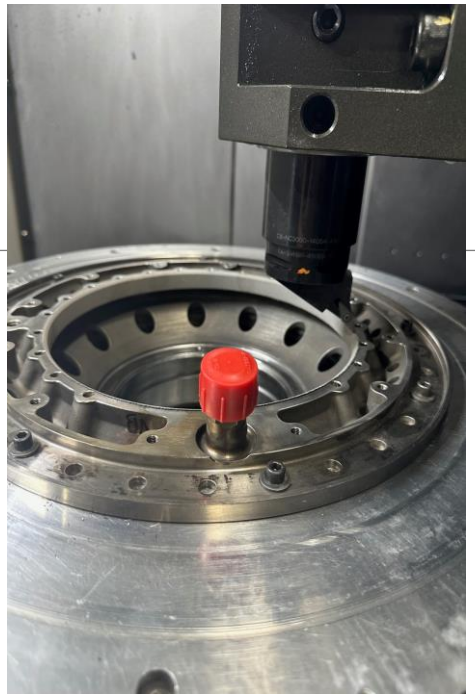
Hyundai LV1100R VTL

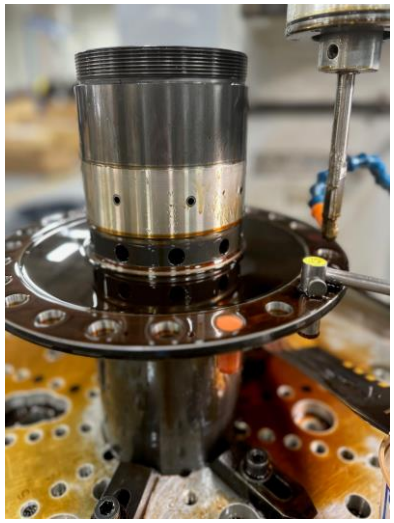
Vacuum Furnace

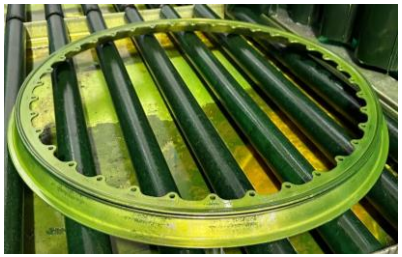
CNC Horizontal Boring & Milling Machine

Robotic Eddy Current Inspection System









Repair Equipment: Size Envelopes

- **VTL Turning**: up to 60” Ø x 32”
- **CNC Turning**: up to 26” Ø x 42”
- **CNC Milling**: up to 58” x 58” x 36” work envelope
- **OD Grinding**: up to 65” Ø x 40”
- **Long Shaft OD Grinding**: up to 34” Ø x 144”
- **ID Grinding**: limited to OD swing of 42” Ø x 26”
- **Sinker EDM**: 30” x 30” x 20”
- **Dynamic Balancing**: 42” Ø x 12” & 250 lbs. max
- **Hyundai 2 Axis VTL**: 53” swing x 45.7” max turning diameter x 39.4” max turning height
- **Kuraki 5 Axis Horizontal Machining**: 59.000 ” X 47” x 27.5”
- **Vertical Spindle Honing:** Honing Bore Capacity .125” -1.500”

III. FLORIDA FACILITY

3501 ENTERPRISE WAY, MIRAMAR, FL 33025

Products Serviced

Pneumatic

Engine Starters

Pneumatic Valves

Pneumatic Drive Units

Starter Valves

Flow Controls

Temp Sensors

Anti Ice Valves

Turbo Fans

Oil

Pressure, Scavenge & Lube Pumps

Scavenge Valves

Shut-off Valves

Oil/Fuel Heat Exchangers

Oil Flow Transmitters

Oil Filters

Electro-Mechanical

Rotary Actuators

Linear Actuators

Jack Screws

Temp Switches

Pressure Switches

Sensors

Fuel

Fuel Pumps

Fuel Heaters

Actuators

Pressure Switches

Fuel Valves

Boost Pumps

Fuel Flow Transmitters

VBV Gear Motors

Hydraulic

Pumps & Motors

Servo Valves

Actuators

Transducers

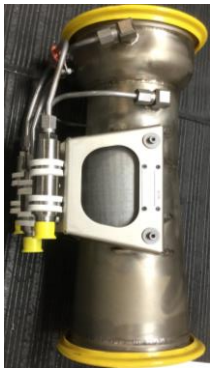
Power Control Units

Pressure Valves

Check Valves

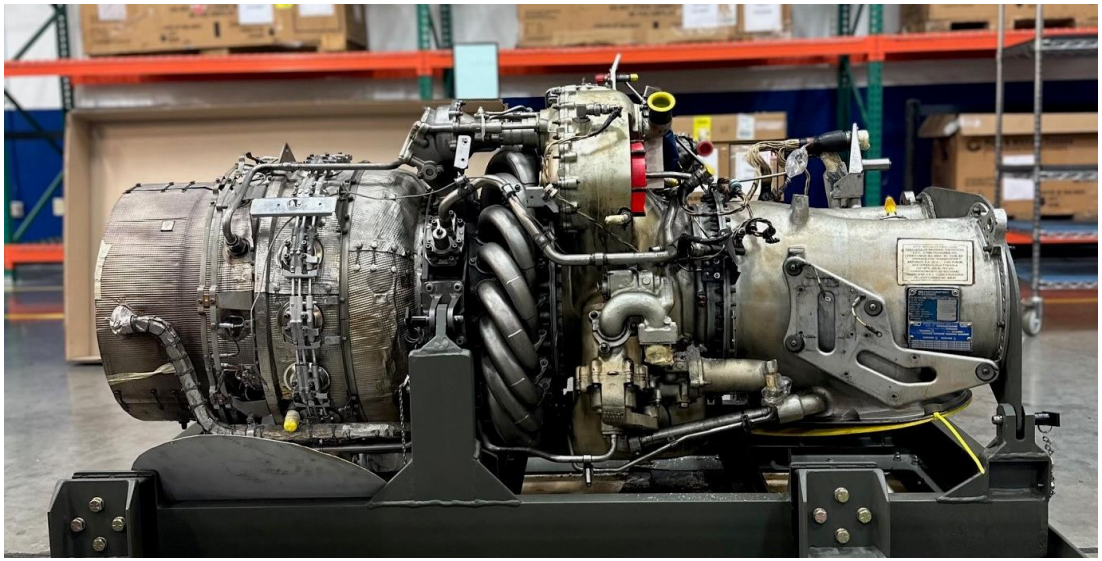
Solenoid Valves

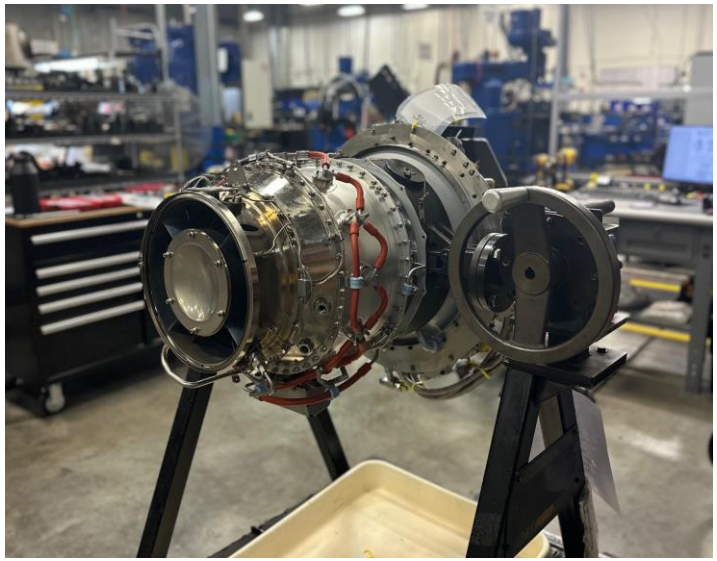
Cylinders



Products Serviced: Engine Teardown

Reduce to Spares Program – PW100, PW200 and PT6





Process Capabilities

- Pneumatic Static Testing
- Pneumatic Flow Testing
- Fuel Flow Testing
- Oil Flow Testing
- Hydraulic Flow Testing
- Mechanical
- Electromechanical
- CNC OD/ID
- CNC Turning/ Machining
- Boring/Milling
- NDT (FPI/MPI)
- Inspection
- Media Blasting (Grit, Plastic, Baking Soda, Glass)
- Painting
- Etching
- Lapping
- Balancing
- Assembly
- Blending
- Flushing
- Aqueous Cleaning
- Ultrasonic Cleaning

Repair Equipment

Pneumatic Test Benches

Static Testing

High, Medium & Low Flow

High Flow / Hot Air

Various Support Functions

Inspection (NDT)

Grit Blast / Paint

Assembly (Mechanical & Electromechanical)

Starter Test Rig

Low Inertia Testing

High Inertia Testing

Fuel Test Benches

Accessory & Medium Flow Pump

Small Accessory Bench

Hydraulic Test Benches

Skydrol Bench

Military Red Oil

Standard Oil

Machining

CNC OD/ID

CNC Turning/Machining

Boring, Milling & Lapping

VTL Machine

Repair Equipment: Size Envelopes

- **CNC Turning**: 8” Chuck Size, 2.3” Bar Capacity, 48” Max Cutting Length
- **CNC Machining Travels**: X axis – 40” / Y axis – 16” / Z axis – 16”
- **Boring/Honing/Lapping**
- **Lathe Machine**: 14” Chuck Size, 60” Max Cutting Length
- **Mill Machine**: X axis – 48” / Y axis – 24”
- **VTL Machine**: Ø 42” x 24” H
- **CNC Machining Travels**: X axis – 64”, Y axis – 50”, Z axis – 32”

Testing Equipment

- **Hydraulic Test Stand – MIL-H-5606 – Red Oil**
  - Pump Drive 50 HP 0-3,500 RPM
  - Model No. HCT-6, S/N 1430
  - 15 GPM @ 3,000 PSI Hydraulic Pump
- **Hydraulic Test Stand (Large) – Skydrol**
  - Model No. Mk-3A-3, S/N 002
  - Dual Pump 0-35 GPM @ 4,000 PSI
    - Each 0-70 GPM Mixed
  - Dual Pump Second Stage 0-15 GPM
    - Each 0-30 GPM Mixed
  - 125 HP 0-6,000 RMP Max. Pump Hydraulic Drive
  - Test Pump Circuit Gauges
    - 0-6,000 PSI Pressure Gauges
  - Flowmeters
    - 0-10 GPM Flowmeters
    - 2-60 GPM Flowmeters
- **Hydraulic Test Stand (Small) – Skydrol**
  - 28 cc RPM = GPM @ 1,800 RPM
  - Dual Flow Meter
    - Low Flow 0.20-2.5
    - High Flow 1.0-12.5
  - Hand Pump Static Pressure 0-6,000 PSI
- **Fuel Test Stand (Large) – MIL-PRF-7024 Type II, Test Pumps**
  - Medium Pressure Fuel Supply of 30,000 P.P.H. @ 750 PISG
  - High Pressure Fuel Supply of 3,800 P.P.H. @ 1,500 PSIG
- **Fuel Test Stand (Small) – MIL-PRF-7024 Type II, Valve Testing**
  - High Pressure Fuel Supply of 2,655 P.P.H. @ 4000 PISG
- **Spider Valve Fuel Test Stand – MIL-PRF-7024 Type II**
  - High Pressure Fuel Supply of 2,400 P.P.H. @ 1,000 PISG
- **Oil Test Stand – Turbo Oil**
  - Low Pressure: 90 GPM @ 100 PSIG
  - Medium Pressure: 30 GPM @ 2,500 PSIG
  - High Pressure for Static Test: 5,000 PSIG
  - 40 HP Drive Rated for 7,500 RPM
- **Pneumatic Flow Stands**
  - Low Pressure
    - Max. Flow Range of 230 lbs. per Minute
    - Max. Test Pressures @ 125 PSIG
    - Max. Test Temperatures @ 500 Degrees Fahrenheit
  - High Pressure
    - Max. Flow Ranges of 50 lbs. per Minute
    - Max. Test Pressures @ 300 PSIG
    - Max. Test Temperatures @ 900 Degrees Fahrenheit
- **Pneumatic Starter Test Stand**
  - Dual Pad Ratings @ 2.6 Slug Feet
    - 2.6 Slug Feet 9,000 RPM Max.
    - 13.7 Slug Feet 4,000 RPM Max.
  - Drive Shaft Overspeed Test 15,000 RPM Max.
  - 8 Slug Feet 6,500 RPM Max.
- **Static Bench**
  - 0-100 PSIG
  - 0-300 PSIG
  - 0-6,000 PSIG
  - 0-2 PPM Flowmeters
  - 0-4 PPM Flowmeters

TESCOM
TESCOM

IV. Quality Approvals

CONNECTICUT (CAGE CODE 8T088)

Federal Aviation Administration – SM5R202N
European Aviation Safety Agency – 145.4954
Civil Aviation Administration of China – F00100038
Rolls-Royce Certificate – 113740
ISO 9001 Registered – 64531-IS6
AS9100 Registered – 64531-AS6
Non Destructive Testing (Nadcap) – 6953149958
Sikorsky Flight Safety – SS8805 and SS8806

FLORIDA (CAGE CODE 6VBW9)

Federal Aviation Administration – 6T9R165C
European Aviation Safety Agency – 145.6475
Civil Aviation Administration of China – F00100720
ISO 9001 Registered – 64531-IS6
AS9100 Registered – 64531-AS6

V. OEM Approvals

- Boeing
- Collins Aerospace
- CFM International
- Embraer
- Engine Alliance
- GE Aerospace
- Honeywell
- Lockheed Martin
- Pratt & Whitney
- Pratt & Whitney Canada
- Raytheon Technologies
- Rolls Royce
- Safran Aircraft Engines
- Safran Transmission Systems

VI. VSE Corporation

- ***VSE CORPORATION IS A LEADING PROVIDER OF AFTERMARKET DISTRIBUTION AND MRO SERVICES FOR LAND AND AIR TRANSPORTATION ASSETS***
- ***NASDAQ: VSEC***
- ***GLOBAL EMPLOYEES: 1,350+***
- ***ACTIVE GLOBAL CUSTOMERS: 6,200+***

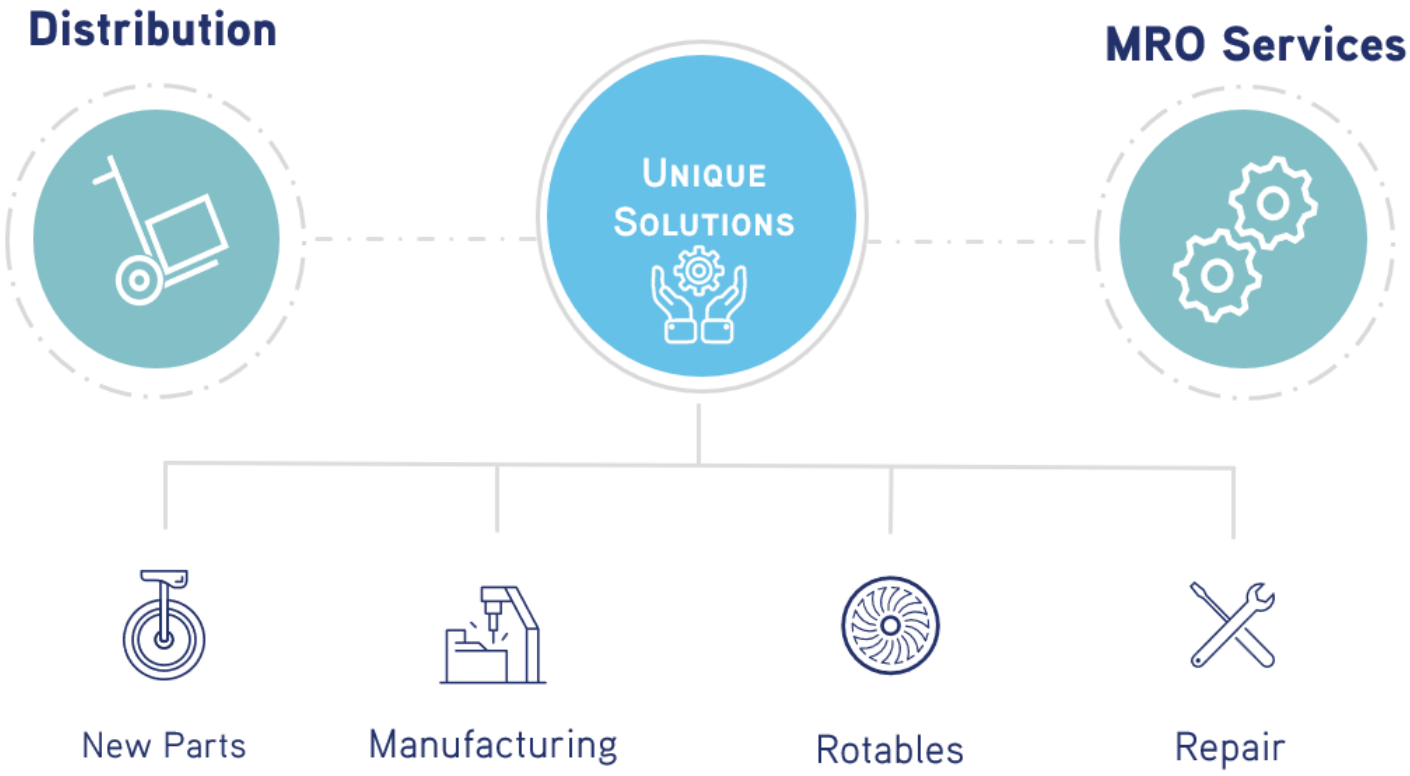
VSE AVIATION

Aftermarket MRO Services and Parts Distribution for Commercial, B/GA, Cargo, Rotorcraft and Defense Customers Globally

WHEELER FLEET SOLUTIONS

Parts Distribution, Inventory Management, E-Commerce Fulfillment, Logistics, Supply Chain Support and Additional Services for Class 4-8+ Vehicles and the U.S. Postal Service

VSE Aviation: Overview



***DISTRIBUTION* – FOUNDED AS AIR PARTS & SUPPLY CO. IN 1959**

***MRO SERVICES* – FOUNDED AS KANSAS AVIATION IN 1992 AND 1ST CHOICE AEROSPACE IN 2015**

VSE Aviation: Distribution Services

Engine Accessories

OEM Authorized Stocking Distributor of Engine Accessories

Auxiliary Power Units

Aftermarket Radial Parts and Components Supporting P&W and Honeywell APUs

Actuation LRU Spares & Services

Actuation LRU Spares for Commercial Aircraft Actuation Products

Avionics & Communication Systems

Avionics, Flight Controls and Displays

Airframe Parts

Exclusive Supplier of Bombardier (Lear, Challenger, Global), Textron and Embraer Factory Spares

Aircraft Tires

Leading Distributor of Aircraft Tires Worldwide

VSE Aviation: MRO Centers of Excellence

Miramar, FL *Commercial, Cargo*	• High-Flow / High-Temp Pneumatics • Fuel Controls, Pumps & Accessories	• Electrical & Electronic Accessories • Electromechanical Accessories • Avionics	• Instruments • Hydraulics • Rotable Sales & Exchanges
Cincinnati, OH *Commercial, Cargo*	**INTERIORS** • Crew Seats • Galley Equipment • Lavatory & Waste Systems	**CARGO SYSTEMS** • ULDs • PDUs • Net Rollers	• Rotable Sales & Exchanges
Bloomfield, CT *Commercial, Cargo & Military*	**ENGINE COMPONENT REPAIR** • Static and Rotating Internal Engine Components • Critical Life Limited Parts	• Gearbox Assemblies • Gearbox Details	
Independence, KS *Business & General Aviation*	**TURBINE ENGINE & APU ACCESSORIES** • Oil • Air • Fuel	• Ignition Exciters • Starters / Generators • Sensors	• Rotable Sales & Exchanges
Augusta, KS *Business & General Aviation*	• Power Supplies • Static Converters • Fire Bottles • Converters	• Generator Control Units • Oxygen Bottles • Hydraulic-Mechanical Actuation	• Hydraulic Pumps and Valves • Brakes • Rotable Sales & Exchanges
Everett, WA *Business & General Aviation, Rotorcraft*	• Fuel Controls • Governors	• Fuel Nozzles • Bleed Valves	
Montebello, CA *Business & General Aviation*	• Wheel & Brake Overhauls • Tire Retreads		

VII. Contact Information

Connecticut
5 Old Windsor Road
Bloomfield, CT 06002
USA
(860) 242-0448
110,000 sq. feet
CAGE: 8T088
UEID: MR9VMYBNSGB5
FAA Repair Station: SM5R202N

Florida
3501 Enterprise Way
Miramar, FL 33025
USA
(954) 517-1706
40,000 sq. feet
CAGE: 6VBW9
UEID: V7LLU37RLJG4
FAA Repair Station: 6T9R165C

SCAN ME

Sales Inquiries: sales@tc-mro.com

Interested in seeing our facilities?
Check out our **virtual tour** at:
www.tc-mro.com